

REMARKS

Applicants' undersigned attorney thanks the Examiner for her comments. Applicants respectfully request reconsideration of this patent application, particularly in view of the above Amendment and the following remarks. Currently, Claims 1-21, 23-25, and 27-47 are pending.

Amendment to the Claims

Claims 1-21, 23-25, and 27-47 have been examined with no claims being allowed. Applicants have amended Claims 1 and 32 to include the limitations of Claim 46, and therefore request cancellation of Claim 46. More particularly, Claims 1 and 32 now include the limitation of a single-site-catalyst-formed ethylene polymer. Applicants have also amended Claim 47 to include a single-site catalyst-formed ethylene polymer in lieu of a single-site catalyst-formed polyethylene. Support for the single-site catalyst-formed ethylene polymer is provided at page 8, line 17 – page 9, line 4. No new matter has been added by this amendment.

No additional fee is due for this Amendment because the number of independent claims remains unchanged and the total number of claims has been reduced.

Information Disclosure Statements

The Examiner has acknowledged receipt of the Second Information Disclosure Statement filed 27 February 2003 and the Third Information Disclosure Statement filed 25 July 2003, and has provided Applicants with a copy of the corresponding Forms PTO-1449 with her initials next to each reference indicating consideration of the cited references.

Applicants filed a First Information Disclosure Statement on 19 June 2001 and a Fourth Information Disclosure Statement on 12 May 2004. Applicants respectfully request the Examiner's acknowledgment of consideration of each of the references cited in the First Information Disclosure Statement and in the Fourth Information Disclosure Statement.

Claim Rejections - 35 U.S.C. §102

The rejection of Claims 1-2, 4-6, 10-13, 16-18, 23-25, 27-28, 31-33, 35-37, 41, and 45 under 35 U.S.C. §102(b) as being anticipated by Lee et al. (European Patent Application No. 1,070,736 A1, hereinafter "Lee") is respectfully traversed, particularly in view of the above Amendment and the following remarks.

Lee discloses a composition for an air-permeable film that includes a linear, low density polyethylene resin, a polypropylene resin, an ethylenepropylene copolymer, a polyolefin resin, and an inorganic filler.

For a reference to anticipate a claim, the reference must disclose each and every element or limitation of the claim. Lee does not disclose each and every element or limitation of independent Claims 1, 12, and 32.

Applicants' invention as recited in currently amended independent Claims 1 and 32 requires a matrix polymer that consists of an ethylene homopolymer or copolymer, wherein the ethylene homopolymer or copolymer comprises a single-site-catalyst-formed ethylene polymer. Lee fails to disclose a single-site-catalyzed-formed ethylene polymer in the matrix polymer.

Additionally, Applicants' invention as recited in independent Claim 12 requires a laminate waste material including a polymer incompatible with the matrix polymer. The Examiner states that the source of the polymer would not make a difference with regard to the final product. To the contrary, laminate waste material includes more than just polypropylene. For example, the laminate waste material used in the Example on pages 14-16 of the present application had the following composition, in percentages by weight: 37.20% CaCO₃, 35.80% polypropylene, 20.30% LLDPE, 3.36% ethylene vinyl acetate, and 3.36% copolymer (Page 15, lines 9-12). Lee fails to disclose or suggest the inclusion of this or any other laminate waste material. Instead, Lee recites polymers by their individual or group names, such as polypropylene or polyolefins. A person skilled in the art would not be motivated to substitute laminate waste material in a composition that calls for polymers in their pure form precisely because of potentially unpredictable effects of the impurities present within waste materials. Applicants discovered the synergistic effects of such impurities for the purpose of enhancing void formation, and

consequent breathability, compared to the same composition made with virgin materials, as illustrated in the Example on pages 14-16 of the present application. Lee fails to disclose a breathable, stretch-thinned film that includes any laminate waste material.

For at least the reasons presented above, Applicants respectfully submit that Claims 1, 12, and 32 are not anticipated by Lee. Because Claims 2, 4-6, 10, 11, 13, 16-18, 23-25, 27-28, 31, 33, 35-37, 41, and 45 depend from Claims 1, 12, and 32, respectively, these claims are also not anticipated by Lee. Thus, Applicants respectfully request withdrawal of this rejection.

Claim Rejections - 35 U.S.C. §103

A. Lee in view of Stopper

The rejection of Claims 1-2, 4-13, 16-21, 23-25, 27-33, and 35-45 under 35 U.S.C. §103(a) as being unpatentable over Lee et al. (European Patent Application No. 1,070,736 A1, hereinafter "Lee") in view of Stopper et al. (WO 98/44025, hereinafter "Stopper") is respectfully traversed.

As mentioned above, Lee discloses a composition for an air-permeable film that includes a linear, low density polyethylene resin, a polypropylene resin, an ethylenepropylene copolymer, a polyolefin resin, and an inorganic filler, but fails to disclose or suggest the inclusion of a single-site-catalyzed-formed ethylene polymer or any laminate waste material.

Stopper discloses a breathable microporous film that includes a thermoplastic polymer, filler particles, and a mono-functional hindered phenol. The film of Stopper has been designed to have improved strength and stretch characteristics compared to conventional filled films, such that the film is more tolerant of irregularities when stretched.

Stopper refers to a "thermoplastic polymer" portion of a film. The thermoplastic polymer portion of the film of Stopper is essentially the matrix polymer of the film. As pointed out by the Examiner, Stopper recites a list of polymers that may be included in the thermoplastic polymer portion of the film. This list of polymers includes styrene, nylon, and polyester. However, Stopper fails to disclose

or suggest any incompatibility between these polymers and the remainder of the thermoplastic polymer portion, or matrix polymer.

Stopper defines the term “blend” as a mixture of two or more polymers while the term “alloy” means a sub-class of blends wherein the components are immiscible but have been compatibilized. Further, “compatibilization” is defined as the process of modifying the interfacial properties of an immiscible polymer blend in order to make an alloy. (Page 5, lines 1-6).

Stopper further discloses improved polymer distribution, fewer overall irregularities, and “toughness” as some of the benefits of the film composition (Page 12, lines 8-29). Thus, Stopper suggests that the polymers within the thermoplastic polymer portion of the film are compatible. The compatibility requirement of Stopper is further supported at page 10, lines 24-26, of the specification.

In contrast, Applicants’ invention includes a polyethylene-based matrix and a smaller amount of an *incompatible* polymer, such as polypropylene. Additional incompatible polymers, such as styrene, nylon, and polyester, may also be present in the film. More particularly, as described at page 7, lines 8-10, of the present application, in a polyethylene matrix, the presence of polypropylene forms a segregated structure due to the thermodynamic incompatibility of polypropylene and polyethylene polymers. Thus, in the present application, it is necessary that the polyethylene and polypropylene polymers, as well as styrene, nylon, and/or polyester, are not blended because the incompatibility between these polymers enhances the void formation and, hence, the breathability in the film.

Even if Lee and Stopper were combined, there is no teaching or suggestion, absent impermissible hindsight, to include styrene, nylon, and/or polyester in a matrix polymer with which these polymers are incompatible.

Furthermore, neither Lee nor Stopper discloses or suggests a single-site-catalyzed-formed ethylene polymer in a matrix polymer. Additionally, neither Lee nor Stopper discloses or suggests the inclusion of any waste material in a breathable, stretch-thinned film. More particularly, Stopper further fails to disclose or suggest the inclusion of laminate waste material that includes a polymer incompatible with a matrix polymer within the breathable film.

For at least the reasons given above, Applicants respectfully submit that the teachings of Lee in view of Stopper fail to disclose or suggest Applicants' claimed invention. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

B. Lee in view of Stopper in view of Burns

The rejection of Claims 3 and 14-15 under 35 U.S.C. §103(a) as being unpatentable over Lee in view of Stopper as applied to the claims above, and further in view of Burns, Jr. et al. (U.S. Patent No. 6,328,723, hereinafter "Burns") is respectfully traversed.

Burns discloses an absorbent article including a breathable microporous film. The film is composed of a thermoplastic resin and inorganic fillers dispersed in the thermoplastic resin. Burns lists ultra low density polyethylene (ULDPE) as one example of a suitable thermoplastic polymer, but does not disclose or suggest that ULDPE is *equivalent to* the polymers listed in Stopper. Furthermore, Burns fails to disclose or suggest the inclusion of any incompatible polymers within the film, but instead lists a variety of thermoplastic polymers including polyethylene, polypropylene, or *blends* thereof (Col. 6, lines 25-40). As explained above, such polymer blends are compatibilized, as opposed to being in incompatible phases as in the present invention.

Even if Lee, Stopper, and Burns were combined, there is no teaching or suggestion, absent impermissible hindsight, to provide a matrix polymer that includes ultra low density polyethylene in combination with polymers that are incompatible with the matrix polymer.

Furthermore, neither Lee nor Stopper nor Burns discloses or suggests a single-site-catalyzed-formed ethylene polymer in a matrix polymer. Additionally, neither Lee nor Stopper nor Burns discloses or suggests the inclusion of any waste material in a breathable, stretch-thinned film.

For at least the reasons given above, Applicants respectfully submit that the teachings of Lee in view of Stopper and further in view of Burns fail to disclose or suggest Applicants' claimed invention. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

C. Lee in view of JP '042

The rejection of Claims 45-47 under 35 U.S.C. §103(a) as being unpatentable over Lee in view of Japanese Patent Publication No. 10-245042 (hereinafter "JP '042") is respectfully traversed.

A copy of a computer translation of the full text of JP '042, obtained from the Japanese Patent Office website, is attached to this document following page 14.

JP '042 is directed to a porous bag. One surface of the bag comprises two or more layers of porous base material (1a and 1b). An opposite surface of the bag comprises one or more layers of coating material (2a and 2b) including a heat seal layer (2b). The contents of the bag are positioned between the porous base material (1) and the coating material (2).

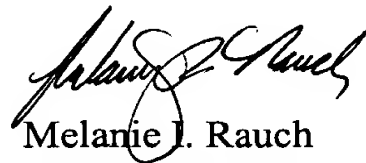
The heat seal layer (2b) is made of polyethylene which is polymerized or copolymerized by a single-site catalyst. According to paragraph 29 of JP '042, the reinforcement layer (2a) and the heat-sealing layer (2b) are both *non-permeable*. Since JP '042 fails to disclose or suggest a single-site-catalyst-formed ethylene polymer within a breathable film, there is no motivation to employ the single-site-catalyst-formed polyethylene of JP '042 in the air-permeable film of Lee, nor is there any expectation that a combination of JP '042 and Lee would result in a breathable film comprising a matrix polymer that consists of an ethylene homopolymer or copolymer, wherein the ethylene homopolymer or copolymer comprises a single-site-catalyst-formed ethylene polymer.

For at least the reasons given above, Applicants respectfully submit that the teachings of Lee in view of JP '042 fail to disclose or suggest Applicants' claimed invention. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Conclusion

Applicants believe that this case is now in condition for allowance. If the Examiner feels that any issues remain, then Applicants' undersigned attorney would like to discuss the case with the Examiner. The undersigned can be reached at (847) 490-1400.

Respectfully submitted,



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